

## Chapter 5: Land Use and Open Space

### 5.1 Introduction

This chapter discusses land uses and the availability and quality of open space in the watershed. Current land uses are both a problem, where they contribute to degraded water quality and where there is insufficient open space for recreation and wildlife habitat, and an asset, where there are valuable open space resources. The urban character of the watershed, and the specific uses that compete for the available land, make it a challenge to preserve open space and protect water quality from nonpoint source runoff in many parts of the watershed. Where open space is currently available, it is often under significant development pressure. On the positive side, the Mystic River watershed is home to substantial state-owned parklands along the water, which are our inheritance from the work of Charles Eliot in the late 1800s. In addition, the decline of industrial uses and opportunities to redevelop old industrial and commercial sites are offering opportunities to reclaim open space in many parts of the watershed.

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This chapter first provides an overview of current land uses in the watershed, and discusses the water quality impacts associated with those land uses. The chapter then focuses on open space – where it is currently, where more is needed, and what the priorities are for preserving or restoring it. The final section of this chapter discusses priorities for action. The next two chapters focus specifically on two important values of open space: recreation (Chapter 6) and wildlife habitat (Chapter 7).

### 5.2 Land Use

Table 5-1 provides data on current land uses in the watershed, by subbasin. Figures 5-1 through 5-10 are maps showing the distribution of land uses by type for the watershed as a whole and for each subbasin. Residential uses predominate in the watershed (49% of total land area), followed by open space (26%) and industrial uses (8%). The mix of uses varies dramatically among subwatersheds, however.

The proportion of open space is substantially lower in the lower part of the watershed (8% in the Chelsea Creek subbasin and 13% in the Mystic 2 subbasin – the saltwater portion of the Mystic River), and higher in the upper, more suburban part of the watershed (35% in the Aberjona subbasin and 30% in the Horn Pond and Mystic Lakes subbasins.) Industrial uses are concentrated in the lower watershed, closest to Boston Harbor, and in the upper watershed in the Aberjona subbasin (as shown in red on Figure 5-1). The combination of commercial, industrial and transportation uses consumes more than half the available land in the saltwater portion of the Mystic River (Mystic 2 subbasin) and 40% of the land in the Chelsea Creek subbasin. In contrast, there are no commercial, industrial or transportation uses in the Mystic Lakes subbasin.

**Table 5-1: Land Use by Subbasin**

		<b>Aberjona</b>	<b>Horn Pond</b>	<b>Mystic Lakes</b>	<b>Mill Brook</b>	<b>Mystic River 1</b>	<b>Alewife Brook</b>	<b>Malden River</b>	<b>Mystic River 2</b>	<b>Chelsea Creek</b>	<b>Total</b>
Agriculture	acres	0.01	0.24	0.03	0.11	0	0.02	0.11	0	0	0.52
	%	0.1%	2.4%	0.8%	2.1%	0.0%	0.3%	1.1%	0.0%	0.0%	0.8%
Commercial	acres	0.71	0.55	0	0.36	0.54	0.48	1.19	0.29	0.3	4.42
	%	4.4%	5.5%	0.0%	6.9%	6.8%	6.8%	12.1%	9.0%	8.5%	6.6%
Industrial	acres	2.39	0.44	0	0.01	0.39	0.41	0.75	0.79	0.41	5.59
	%	14.9%	4.4%	0.0%	0.2%	4.9%	5.8%	7.6%	24.5%	11.6%	8.4%
Transportation	acres	0.58	0.16	0	0.02	0.54	0.18	0.21	0.63	0.69	3.01
	%	3.6%	1.6%	0.0%	0.4%	6.8%	2.6%	2.1%	19.5%	19.5%	4.5%
Residential	acres	6.25	5.36	2.28	3.44	4.09	3.8	4.81	0.99	1.73	32.75
	%	39.1%	53.5%	60.6%	66.2%	51.8%	54.0%	48.7%	30.7%	49.0%	49.2%
Recreation	acres	0.47	0.25	0.3	0.21	0.37	1.14	0.27	0.11	0.1	3.22
	%	2.9%	2.5%	8.0%	4.0%	4.7%	16.2%	2.7%	3.4%	2.8%	4.8%
Open Space	acres	5.59	3.01	1.15	1.05	1.97	1.01	2.53	0.42	0.3	17.03
	%	34.9%	30.1%	30.6%	20.2%	24.9%	14.3%	25.6%	13.0%	8.5%	25.6%
All Land Uses	acres	16	10.01	3.76	5.2	7.9	7.04	9.87	3.23	3.53	66.54
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Analysis of MassGIS land use data (see maps in Figures 5-1 through 5-10.)

Open space (shown in green on Figure 5-1) is most prominent in the middle of the watershed (the Middlesex Fells) and smaller patches elsewhere, especially in the northwest areas of the watershed.

As in many other areas of the state, the portions of the Mystic that still have open space have been losing it to development. Table 5-2 shows the change in the percentage of undeveloped land from 1971 to 1999 for communities in the watershed. The table ranks communities from highest to lowest percentage of open space in 1971. It shows that many of the communities with the highest percentage of open space in the earlier period had lost a substantial portion of that space by 1999. With the exception of Cambridge, Everett, and Somerville (all of which are densely-developed and had small increases in open space), every other community in the watershed lost open space during this period.

<b>Table 5-2: Change in Undeveloped Land Area 1971-1999</b>			
	<b>Percent of Land Undeveloped</b>		<b>Change in Percent Land Undeveloped 1971-1999</b>
	<b>1971</b>	<b>1999</b>	
Wilmington	61.0%	48.5%	-12.5%
Reading	49.7%	42.9%	-6.8%
Stoneham	47.2%	38.9%	-8.4%
Woburn	42.4%	27.7%	-14.7%
Wakefield	40.6%	34.1%	-6.6%
Burlington	39.5%	30.8%	-8.7%
Lexington	38.6%	34.9%	-3.7%
Medford	31.5%	30.2%	-1.3%
Winchester	30.6%	22.8%	-7.8%
Revere	24.4%	21.3%	-3.1%
Melrose	23.8%	23.0%	-0.8%
Belmont	18.8%	17.2%	-1.6%
Cambridge	13.2%	13.3%	0.1%
Malden	13.0%	9.9%	-3.1%
Boston	12.7%	11.6%	-1.0%
Winthrop	10.4%	8.3%	-2.2%
Arlington	9.2%	8.9%	-0.3%
Watertown	6.1%	5.6%	-0.5%
Chelsea	4.0%	1.3%	-2.7%
Everett	1.0%	2.0%	1.0%
Somerville	0.6%	0.9%	0.4%
<b>Total Watershed</b>	<b>28.2%</b>	<b>23.6%</b>	
<i>Source: MassGIS, accessed December 2003. Includes all land in these communities, not just the land within the Mystic River Watershed.</i>			

Another measure of the extent to which the watershed is already heavily developed is provided by the Massachusetts Executive Office of Environmental Affairs' Community Preservation Initiative build-out analyses. These analyses were prepared for every city and town in the state. They characterize the land available for additional development, and estimate additional numbers of residents, numbers of students, water use, solid waste, roadway miles and other impacts of expanding to full build-out. The estimates take into account the current zoning provisions in each town, and treat all parcels that are not permanently protected from development as potentially developable.

Not surprisingly, the build-out analyses show very little potential for expanded development in the Mystic River watershed communities. For all communities that are at least partially in the watershed, overall population could increase only by 3 percent over current levels, even if all communities were developed to the maximum extent permitted by current zoning and permanent constraints on development. For the 9 core watershed communities whose area is at least 50 percent within the watershed, the potential population increase is the same (a little over 3 percent.)<sup>1</sup>

## 5.3 Open Space

### Overview of Watershed Open Spaces

The Mystic River watershed is home to a number of high-quality urban wilds and urban parks, and to other open spaces that could be high-quality resources with some restoration and improved maintenance. This section provides an overview of these resources.

#### *DCR Reservations*

The Mystic River watershed is blessed with a heritage of parklands, formerly owned by the Metropolitan District Commission (MDC) and now managed by the state Department of Conservation and Recreation (DCR). Table 5-3 lists these parklands.

<b>Table 5-3: DCR Urban Parks and Reservations in the Mystic River Watershed</b>		
<b>Park/Reservation</b>	<b>Acres</b>	<b>Description</b>
Alewife Brook Reservation (Little Pond)	120 acres	Portions located in Arlington, Belmont, Cambridge, and Somerville. Abuts Little Pond, Little River and Alewife Brook. Little Pond is an urban pond surrounded by residences. The Reservation contains significant wetlands, and much of it is in the 100-year floodplain. Provides significant wildlife habitat as an urban wild. Master Plan completed June 2003. Site for a constructed 3½ wetland proposed by City of Cambridge.

<sup>1</sup> These figures exclude Cambridge, which conducted an analysis of redevelopment potential, rather than just the potential to develop currently-undeveloped land. This is a more useful analysis for urbanized communities like those in the Mystic.

<b>Table 5-3: DCR Urban Parks and Reservations in the Mystic River Watershed</b>		
<b>Park/Reservation</b>	<b>Acres</b>	<b>Description</b>
		to retain additional stormwater discharged locally as a result of separating combined sewers.
Belle Isle Marsh Reservation	142 acres	Located in Chelsea & Winthrop. Largest, most significant wetland in the City of Boston; serves as an important wildlife and saltwater habitat in a highly-urbanized area. Reservation preserves 152 acres of the 241 acre Belle Isle Marsh, the last remaining salt marsh in Boston. 28 acres is landscaped with paths, benches and an observation tower. Donated to the state by MassPort in 1979.
Blair Pond/ Wellington Brook	6.8 acres	Located in Belmont. Mostly wooded. Master Plan completed in 1999. Forms corridor with Alewife Reservation.
Mary O'Malley Park	19 acres	Located in Chelsea (Admirals' Hill neighborhood). Abuts Mystic River (saltwater portion) and Island End River. Open grass & lawn, with tennis courts. Attractive views of river and harbor. Heavily used as a recreation site by local residents. Facilities need repair, and boat dock is in poor repair.
Gateway Center Mall Park	15 acres	Located in Everett, along east bank of the Malden River. Created as part of the restoration of the Monsanto/Solutia site in 1995 and as part of the Gateway Mall Development. Maintained by Developers Diversified.
Middlesex Fells Reservation	2,575 acres	Located in Medford, Malden and Melrose. Includes South and Middle Reservoirs, Spot Pond, Wright's Pond and Quarter-Mile Pond. Meadow converting to woodland. Offers hiking, rock climbing, mountain biking, cross-country skiing, horseback riding, and picnicking.
Mystic River Reservation	130 acres	Located in Somerville, along the Mystic River from the Mystic Lakes to the Malden River. Mostly grassland & meadow, some wooded.
Draw 7 Park	9 acres	Part of the Mystic River Reservation, in Somerville. Grass. Named for the Draw Number Seven Railroad Bridge, which once crossed the Mystic River. Built in cooperation with the MBTA. Provides two soccer fields, a bikeway/walkway, and a picnic area.
Mystic Lakes		Eastern shore of Upper and Lower Mystic Lakes, along the Mystic Valley Parkway in Medford and Winchester. Swimming at Sandy Beach on the Upper Mystic; boating available on both the Upper Mystic (non-powered boats only) and the Lower Mystic Lake (power boats with no wake allowed.)

These parklands have in some cases suffered in the past from lack of maintenance, and some facilities are in disrepair.

The DCR has completed Master Plans for Blair Pond and the Alewife Reservation, and is just beginning to implement the plan. In addition, the DCR is initiating a master planning process for the Mystic Reservation. The Mystic Reservation Master Plan has been delayed for some time by lack of funding, and should be a high priority for the near future.

### **Other Open Spaces**

In addition to the state-owned open space resources described above, Table 5-4 lists other significant open space parcels in the watershed:

<b>Table 5-4: Significant Non-DCR Open Spaces in the Mystic River Watershed</b>		
<b>Open Space</b>	<b>City/Town</b>	<b>Description</b>
Ell Pond	Melrose	City park, w. active & passive recreation
Horn Pond Conservation Area	Winchester	500 acres of wetlands, ponds and woods; boat and canoe access
Horn Pond Brook	Winchester	Walking trail along brook from Horn Pond to Wedge Pond
Winter Pond	Winchester	17 acres, with canoe access
Wedge Pond	Winchester	Canoe access at Elliot Park
Brooks-Parkhurst Town Forest	Winchester	29 wooded acres with trails
Brooks Estate	Medford	50+ acres of historic open space; trails, birding, and fishing in Brooks Pond
Arlington Reservoir	Arlington	1 mile walking trail around reservoir
Spy Pond	Arlington	Canoe and limited boat access
Clay Pit Pond	Belmont	½ mile path around pond
Fresh Pond Reservation	Cambridge	2.5 mile trail around Cambridge drinking water reservoir, plus add'l trails
Village Landing Park	Everett	New park adjacent to Malden River
Condor Street Urban Wild	East Boston	New 4.5 acre urban wild on Chelsea Creek, reclaimed from abandoned industrial land
Schrafft Center	Charlestown	Boardwalk and small park created on newly-filled land along the Mystic River during late 1980s renovations of the Schrafft Center.

While there are significant protected open space resources in the watershed, they are not evenly distributed, and some communities have substantially less access to nearby open space than do other communities. In general, residents in the lower watershed have less access to high-quality open space than do upper watershed communities, although there are exceptions to this generalization.

## Watershed Priorities for Open Space Protection & Restoration

It is difficult to set priorities for open space protection in the watershed, because there is a need to protect or reclaim open space in every part of the watershed. In addition, emphasizing different benefits of open space would lead to different priorities. Two recent studies have addressed the challenge of setting priorities for open space protection.

### Natural Cities in the Mystic River Watershed

The Urban Ecology Institute applied its Natural Cities Program suite of tools and services to the Mystic River watershed, in a study funded by the U.S. Forest Service.<sup>2</sup> The Natural Cities approach draws on Ecological Resources mapping, Rapid Ecological and Legal Assessments, and Social Surveys to select the most critical sites in an urban area and to target limited resources toward protecting and restoring those priority sites. ([http://www.bc.edu/bc\\_org/research/urbaneco/program/natcit\\_components.html](http://www.bc.edu/bc_org/research/urbaneco/program/natcit_components.html))

In the Natural Cities/Mystic project, the project team studied a Ecological Resources Map of the Greater Boston Harbor Region, and identified 114 sites of relative ecological importance within the Mystic River watershed. The sites ranged from half an acre to 1,600 acres in size. This list of sites was compared with the results of a Social Survey to identify 26 sites with both high ecological importance and social interest. Knowledge of these 26 sites was enhanced by applying the protocols of the Rapid Ecological and Legal Assessments. The project will create final Action Plans for 11 sites in Woburn, Chelsea, East Boston, Somerville, Malden, Cambridge, Burlington and Revere that are listed in Table 5-5 below and shown in the map below.

**Table 5-5: UEI Natural Cities/Mystic Project Priority Sites**

Sites	Cities	Community Concern
Hess Site and Condor Street Urban Wild	East Boston	Urban blight
Parkway Plaza and Mill Creek	Chelsea	Potential green space
Lower Malden River	Malden & Medford	Polluted waters
Belle Isle Marsh	East Boston	Wetland degradation
Woburn Landfill	Woburn	Leaching landfill
Burlington 'Native Forest'	Burlington	Preservation of overlooked resource
Boston Regional Medical Center	Stoneham	Development threat

<sup>2</sup> Partners in the project included the Chelsea GreenSpace and Recreation Committee, the Neighborhood for Affordable Housing (East Boston), the Mystic River Watershed Association, Eagle Eye Institute (Somerville), the Massachusetts Department of Environmental Management's (DEM) Urban and Community Forestry Program (now part of the Department of Conservation and Recreation), the Executive Office of Environmental Affairs' Watershed Initiative, the Tufts University WaterSHED Center, and the Boston College Environmental Studies Program.

**Table 5-5: UEI Natural Cities/Mystic Project Priority Sites**

Sites	Cities	Community Concern
Little Pond and Alewife Reservation	Cambridge & Belmont	Flooding, natural area preservation
Wood Island Bay Marsh	East Boston	Pollution from the airport
Mystic River Reservation	Somerville	Reservation degradation

Source: Urban Ecology Institute website,  
[http://www.bc.edu/bc\\_org/research/urbaneco/program/natcit\\_Lpartnerships.html](http://www.bc.edu/bc_org/research/urbaneco/program/natcit_Lpartnerships.html)



### **MyRWA Open Space Report**

The Mystic River Watershed Association (MyRWA) conducted an inventory of open space parcels in the watershed with potential watershed importance, and applied a series of criteria to set priorities for protecting or preserving these sites.<sup>3</sup> This project was funded by U.S. EPA Region 1.

<sup>3</sup> The study focused on watershed-wide values in ranking sites. Sites that may not be a high priority at the watershed level may nonetheless be a high priority for local communities for a variety of reasons.

Candidate sites were identified by municipal conservation agents and planners, by a review of municipal Open Space plans, and by analyzing maps.<sup>4</sup> The inventory covered 113 sites, totaling 2,366 acres, that are now or could become valuable recreational and habitat resources, and that may affect the quality of waterbodies. The smallest site in the inventory is less than half an acre, and the largest site (Great Meadow in Lexington) is 183 acres. Of the 113 sites, 76 were classified as candidates for preservation, 23 as candidates for restoration, and 14 as candidates for both (portions of the site needing to be preserved and portions needing restoration), based on their current condition. The MyRWA study did not include parks and reservations owned by the MA Department of Conservation and Recreation, which are assumed to be well-protected.

The sites were given scores representing a variety of characteristics, and priority rankings for protection or restoration were developed based on those scores. The priority rankings reflected the following site characteristics:

- Quality of current cover (wetland, forest/wooded, grassland/meadow, grass field/lawn, agricultural or impervious);
- Impact on watershed values (adjacent to water body, contributing to open space corridors, buffering water from highways, providing wildlife habitat, including a vernal pool, affecting flooding, providing public access to the water, and/or having scenic or aesthetic value);
- Environmental justice priority (located in or adjacent to an EJ community); and
- Threat of development (high, medium or low), for currently-undeveloped sites.

Assigning scores and applying the ranking criteria identified 32 sites as high priority for preservation, and 23 sites as high priority for restoration. Tables 5-6 and 5-7 list the sites selected as high priority for protection and restoration, respectively.

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<sup>4</sup> Three communities were excluded from the study because only a very small portion of their land area falls within the watershed. The excluded communities were Wakefield, Watertown and Wilmington.

<b>Table 5-6: MyRWA Open Space Report – Priority Sites for Protection</b>				
<b>Site name</b>	<b>City/town</b>	<b>Acres</b>	<b>Env Justice</b>	<b>Likelihood of Development</b>
<b>High combined quality and watershed importance</b>				
O'Neill Properties	Belmont	12.17		high/current
Great Meadow	Lexington (Arlington)	183		moderate
McLean Hospital	Belmont	97		high/current
Fulgoni Parcel	Reading	3.9		high/current
Mugar Parcel	Arlington	17.26		high/current
MDC Skating Rink/Route 2 Land	Belmont	4.38		high
ADL/Bullfinch Property	Cambridge	36.6		high/current
Longwood Poultry Farms	Reading	35.43		high/current
MDC/Leased to American Legion	Stoneham	28		high
Northeastern Property	Woburn	75		high/current
Shannon Property	Burlington	30	x	moderate
Winning Farm	Lexington	9		moderate
Elizabeth Island	Arlington	2		moderate/low
Pansy Patch	Winchester	9.5		high
Cummings Estates	Burlington	49		high
Locke/Hamilton Farm	Winchester	19.5		high
Cummings Estates	Woburn	50		high
Malden Hospital Parcel	Malden	35	x	high
Gutierrez Company Land	Burlington	36		high/current
Eastman Property	Stoneham	4		high
Fishermen's Bend	Winthrop	7.5	x	moderate
<b>High watershed importance, moderate or low quality</b>				
Town Library	Belmont	1.9		high/current
Busa Farm/Sun Valley Farm	Lexington	10		high
Boston Regional Medical Center	Stoneham	40.7		high/current
Symmes Hospital	Arlington	18	x	high/current
<b>Environmental justice priority</b>				
Bainbridge Road Parcel	Malden	1	x	moderate
Coughlin Playground	Winthrop	9.8	x	moderate
Cambridge Health Alliance Property	Somerville	6	x	high/current
McKinney Property	Burlington	2.3	x	high
Pleasant Court	Winthrop	1.4	x	high
Public Landing	Winthrop	5	x	high
Little Mystic Channel	E.Boston/Charlestown	1.5	x	high
<i>Source: Mystic River Watershed Association, Open Space Priorities in the Mystic River Watershed, February 2004</i>				

The remaining 55 potential candidates for preservation were not ranked as having high watershed importance, were not considered a priority for environmental justice reasons, or were not thought to be candidates for development under current circumstances. A change in status regarding potential for development might make some of these sites a high priority. It is therefore important to continue tracking the status of such sites on a regular basis. Some of these sites might be considered as higher priorities for attention if they do not currently offer public access but could if acquired by a municipality.

The following are the 23 sites selected as high priority for restoration. Six of these sites were also selected as high priorities for preservation of a portion of their property.

<b>Table 5-7: MyRWA Open Space Report – Priority Sites for Restoration</b>				
<b>Site name</b>	<b>City/town</b>	<b>Acres</b>	<b>Env Justice</b>	<b>Likelihood of Development</b>
<b>High watershed value</b>				
ADL/Bullfinch Property	Cambridge	36.6		high/current
W.R. Grace Property	Cambridge	14		medium
McLean Hospital	Belmont	97		high/current
Assembly Square Area	Somerville	131.18	x	high/current
Boston Regional Medical Center	Stoneham	40.7		high/current
Town Transfer Station	Winchester	8.91		low
Sheperd Brooks Estate	Medford	55		low
Gutierrez Company Land	Burlington	36		high/current
Martignetti Property	Cambridge	7.86		high
Salem Street Area and Junk Yards	Woburn	9.07	x	high
Triangle Area	Cambridge	33		high
Quadrangle Area	Cambridge	90		high
<b>Environmental justice priority, moderate watershed value</b>				
Malden Hospital Parcel	Malden	35	x	high
General Electric Park Site	Everett	8	x	high
Massachusetts Electric Parcel	Revere	5.5	x	low
Symmes Hospital	Arlington	18	x	high/current
East Boston Greenway	E.Boston/ Charlestown	8.5	x	low
Parkway Plaza	Chelsea	38	x	high
Telecom City Parcel	Malden	1.6	x	high
Telecom City Parcel	Medford	7	x	high
Forbes Site	Chelsea	17	x	high
<i>Source: Mystic River Watershed Association, Open Space Priorities in the Mystic River Watershed, February 2004</i>				

The remaining 14 candidate sites for restoration were either ranked as low on watershed importance or ranked moderate on watershed importance but not as an environmental justice priority. Including sites that ranked low in watershed importance but were classified as environmental justice sites would have included an additional 13 sites, or

virtually all of the restoration sites in the analysis. Some of the excluded environmental justice sites could become a higher priority, however, if opportunities arose to acquire the sites or to negotiate strong open space provisions in a proposed redevelopment.

### **Opportunities for Improved Land Use and Enhanced Open Space**

There are a variety of opportunities for preserving and improving existing open space, reclaiming open space through redevelopment of already-developed areas, and reducing the impact of developed areas on water quality and flooding.

Unlike other watersheds in the state, which are seeing rapid conversion of undeveloped lands, the Mystic has relatively little undeveloped land left. Some developments are occurring or are proposed on land that is currently undeveloped, particularly in the upper part of the watershed. It is important that communities ensure that these developments do not reduce open space to an unacceptable level, and that they include adequate open space, stormwater management, and wastewater capacity.

Mystic River watershed communities also have the challenge of finding redevelopment options that will both recapture open space and reduce the impacts of land uses on water quality and flooding.

Finally, some of the open space resources in the watershed are in poor condition or are fragmented. Improving urban parks along the rivers and making better connections among them is an important open space priority.

This section comments on the challenges involved in improving land use and enhancing and expanding open space in the watershed. These include the need for strong municipal capacity to make effective land use decisions, the potential that public parklands will be converted to other uses, the impact of port uses on land use and open space options, and the relevance of various state and regional initiatives to land use and open space planning in the watershed.

### **Community Capacity for Promoting Sustainable Land Use**

It is notable that only one of the cities and towns in the Mystic River watershed (Cambridge) has adopted the Community Preservation Act. This act allows communities to create a local Community Preservation Fund through a surcharge of up to 3% on the local real estate tax. The funds can be used for open space, historic preservation, and low- and moderate-income housing. The state provides matching funds as an incentive for communities to take advantage of the act's provisions. The state has distributed almost \$76 million to 61 cities and towns in the state, based on a 100% match of local funds, over the past three years. (<http://commpres.env.state.ma.us/>).

Many Mystic River watershed cities and towns have taken advantage of state funding to develop Community Development Plans, through Executive Order 418. These plans develop maps to define future growth, including housing, open space, commercial and

industrial development, and transportation improvements. Funding of up to \$30,000 is provided to each community that applies and qualifies. Plans are being reviewed by the Department of Housing and Community Development, and can be viewed at <http://commpres.env.state.ma.us/#>. With the exception of Boston, Cambridge, Malden, Arlington and Revere, all of the watershed communities have approved Scopes of Work for a Community Development Plan, and are in various stages of completing them.

A key factor in a community's ability to control local land uses is its use of appropriate bylaws and ordinances. A study by the Massachusetts Historical Society, with funding from the National Park Service, provides a description of bylaws and ordinances that can be used to preserve important community assets, including open space. This report also lists current bylaws and ordinances by community.

Table 5.8 provides results from the Massachusetts Historical Society survey for the Mystic River watershed communities, along with information on local wetlands protection ordinances, Master plans, and Open Space plans.

<b>Table 5.8: Community Plans, Bylaws and Ordinances</b>							
<b>Community</b>	<b>Non-Zoning Wetland Protection By-Law/Ordinance (MACC)</b>	<b>Master Plan (completion date)</b>	<b>Open Space &amp; Recreation Plan (expiration date)</b>	<b>Community Development Plan</b>	<b>Site Plan Review</b>	<b>Cluster Zoning</b>	<b>Overlay Zones</b>
Arlington	Y	-	8/2007	-	x		x
Belmont	N	x (1988)	8/2006 c	x	x	x	x
E. Boston/Charlestown	N	-	1/2007	-	x	x	x
Burlington	Y	-	expired	x			
Cambridge	N	x (1993)	9/2008 c	-	x	x	x
Chelsea*	N	-	11/2008	x	na	na	na
Everett	N	-	4/2009 c	x	x		x
Lexington	Y	x (2002)	expired	x	x	x	x
Malden	N	-	8/2005	-	x		
Medford	N	x (1977)	12/2006	x	x		
Melrose	N	x (1962)	expired	x			
Reading	Y	x (1991)	7/2006	x	x	x	
Revere	Y	-	12/2006 c	-	x	x	
Somerville*	N	-	9/2008 c	x	na	na	na
Stoneham*	N	-	expired	x	na	na	na
Wakefield*	Y	x (1987)	12/2004	x	na	na	na
Watertown	Y	x (1989)	expired	x	x	x	x
Wilmington	N	x (2001)	8/2007	x	x	x	
Winchester*	Y	-	expired	x	na	na	na
Winthrop*	Y	-	expired	x	na	na	na
Woburn	Y	x (1996)	expired	x	x	x	x

**Table 5.8: Community Plans, Bylaws and Ordinances**

Community	Non-Zoning Wetland Protection By- Law/Ordinance (MACC)	Master Plan (completion date)	Open Space & Recreation Plan (expiration date)	Community Development Plan	Site Plan Review	Cluster Zoning	Overlay Zones
* No information provided to Mass. Historical Commission survey. c Indicates Open Space Plan is conditionally approved.							
<b>Sources:</b> Non-zoning Wetland Protection By-Law/Ordinance: Massachusetts Association of Conservation Commissioners (MACC), <a href="http://maccweb.org/wetlands_bylaw.html">http://maccweb.org/wetlands_bylaw.html</a> Open Space Plans: Jennifer Soper, MA Department of Conservation Services, as of October 2004. Community Development Plans: <a href="http://www.commpres.env.state.ma.us/#">www.commpres.env.state.ma.us/#</a> All others: Massachusetts Historical Commission, 2003. "Please note that the information included is not meant to represent a complete and accurate list of community plans, bylaws and ordinances, but rather a representative survey to be updated and improved over time."							

As Table 5-8 shows, a number of watershed communities do not currently have a local wetlands protection bylaw or ordinance, some do not have current Open Space plans, and most do not have a current Master Plan. While municipalities may employ different planning and regulatory tools to control land uses, and no single approach is necessarily best, it is important that each community have an effective tool kit of plans, bylaws and ordinances.

### **Potential Conversion of Parklands to Other Uses**

In setting priorities for open space protection, it is important to recognize that parcels that are currently protected as parks or reservations may not remain protected in the future.

Open space is protected as public trust land under Article 97 of the Amendments to the Massachusetts Constitution, enacted in 1972, if:

- A municipality's Conservation Commission or water department owns it;
- It is owned by one of the State's conservation agencies or a nonprofit land trust;
- It was purchased or improved with state or federal funds;
- It is placed under an Agricultural Preservation Restriction (Chapter 61A) or a Department of Environmental Protection restriction (as part of the Wetlands Conservancy Program); or
- It is protected in perpetuity by a condition of a deed.

Under Article 97, this protected status can be overturned by a series of steps, including among others, a two-thirds vote by the Massachusetts legislature.<sup>5</sup> Unfortunately, recent cases have shown that acquiring a two-thirds vote in the legislature to change the land use of "Article 97 land" is not a difficult task. As stated in a *Sanctuary* magazine article,

<sup>5</sup> Charles River Watershed Association, *Streamer*, Vol. 32, No. 1, Spring 2001, p. 1.

“Although the measure [Article 97] was intended to provide a strong safeguard for conservation land, this open space protection is too often overridden by the legislature and municipalities through home-rule petitions sent to the General Court. Nearly every disposition or change-in-use proposal brought up for a vote has been approved unanimously as a courtesy to the sponsoring legislator. In the year 2000, land transfers constituted over 20 percent of all votes taken in the House of Representatives and over 15% of all votes taken in the Senate.”<sup>6</sup>

Transfers of state parklands in the Mystic River watershed have occurred in the past. For example, approximately 47 acres in the Mystic River Bend Park were used to construct two schools in Medford. In general, such transfers require mitigation by provision of comparable open space elsewhere. Any proposals for such conversions should be viewed with great caution, to ensure that important parcels are not lost simply because they are attractive, inexpensive targets for development or other uses.

### ***Implications of Port Uses for Land Use and Open Space<sup>7</sup>***

Substantial portions of the waterfront in the lower Mystic River watershed are set aside for port uses as “Designated Port Areas” (DPAs).<sup>8</sup> The need to balance port uses with public access and other uses of the waterfront represents a particular challenge in achieving watershed open space and recreation goals. This section describes the current DPAs in the watershed, and discusses the implications of the DPA designations for competing uses in the lower watershed.

The following are the DPAs located in the Mystic River watershed:

- **Chelsea Creek DPA:** along Chelsea Creek.
- **East Boston DPA:** along Mystic River/Inner Harbor.
- **Mystic River DPA:** the saltwater portion of the Mystic River on both sides, Little Mystic Channel, Island End River, and the entrance to Chelsea Creek.

The DPA regulation (Chapter 301 CMR 25.00) was adopted as part of the Massachusetts Coastal Zone Management Program in 1978. It restricts activities in DPAs to those promoting and protecting marine industrial activities and certain supporting uses. While the Public Waterfront Act (Chapter 91) protects public access and natural resources in the state’s other waterfront areas, a DPA designation makes maritime and industrial water-dependent uses the higher priority. Implementation of the DPA regulations is shared by

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<sup>6</sup> Christopher Hardy, “No Net Loss”, *Sanctuary Magazine*, Massachusetts Audubon Society, March/April 2001, p. 22.

<sup>7</sup> Much of this section is based on a study by Tufts University Environmental Law class students completed in 2003 (Tufts University, 2003).

<sup>8</sup> A Designated Port Area (DPA) is defined as a “geographic area of particular state, regional, and national significance for commercial fishing, shipping, water-borne commerce, manufacturing, processing and production activities reliant on water-borne commerce, power generation, and wastewater treatment.”

the MA Department of Environmental Protection (DEP), which reviews and issues licenses for waterfront projects in DPAs, and the MA Office of Coastal Zone Management (CZM), which oversees boundary reviews for DPAs.

A 1994 amendment to the DPA regulation addressed the need for public access to the waterfront within DPAs: "... judicious planning of the use mix in the DPA and its environs, together with compatible incorporation of public access facilities into the design of individual projects, can advance the quality-of-life objectives of the surrounding community without significant interference with maritime activities at or near the waterfront."<sup>9</sup>

There are a number of successful examples of waterfront uses that might provide examples for the lower Mystic DPAs.<sup>10</sup> Some of these waterfront revivals have happened after the decline of port activity, however, and would not be good models for the Lower Mystic, where there continues to be active port use. The Everett Waterfront Assessment and the Chelsea Waterfront Vision both represent strong first steps in the process of reclaiming access to the waterfront for lower watershed communities. The federal Portfields initiative is an interagency partnership that addresses brownfield sites in and around port communities, with an emphasis on development of environmentally sound port facilities.<sup>11</sup> New Bedford MA is one of three original Demonstration Pilot Ports under this program, which may over time provide useful models for revitalization of ports in the Mystic River Watershed.

Long stretches of parkland along the waterfront are not likely to be compatible with port uses in DPAs. More feasible options are likely to be pocket parks or "point access" to the waterfront (perpendicular access to the waterfront from inland locations).

In addition, there may be limits to the amount of small recreational boat use that can be accommodated in a DPA. For example, the regulations discourage placement of boat launches or marinas that would increase the number of small craft using the DPA waters. However, the DEP and CZM may approve a facility that allows launching of small craft upstream of a DPA, with a channel that requires boats to immediately leave but not to transverse the DPA shore-to-shore.

Requests for changes in DPA boundaries can be made by municipalities, port authorities or state agencies, owners of the affected properties, or any 10 citizens of the Commonwealth. Only certain lands are eligible for boundary review, and CZM and DEP may be more inclined to allow temporary or supporting uses than to make a change in the DPA boundaries.<sup>12</sup>

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<sup>9</sup> 1994 Designated Port Area (DPA) Regulations, Introduction, p. 3.

<sup>10</sup> For example, in Massachusetts, the planning efforts conducted for Gloucester, Salem, New Bedford/Fairhaven, and Fall River, and outside of Massachusetts, the Fulton Fish market and the South Street Seaport shopping area in New York City, Baltimore, Vancouver, San Francisco's Pier 39, and the Bell Street Pier at Pier 66 in Seattle.

<sup>11</sup>

<sup>12</sup> The Tufts University student study cited above provides four examples of recent requests for boundary review in the lower watershed.

There are three mechanisms that might allow for increased public waterfront use and access in the watershed's DPAs:

- First, the DPA regulations allow for up to 25 percent of a project to be used for Supporting DPA Uses -- commercial uses such as restaurants or retail businesses.<sup>13</sup> Public access or viewing points along the waterfront could be developed in conjunction with those uses. (DPA Regulations, p. 238.4). Municipal zoning codes determine what qualifies as a Supporting DPA Use. Municipalities can prepare a DPA Master Plan, with a Supporting DPA Use District within the DPA, that would encourage concentrated development of commercial uses with associated public access benefits.
- Second, the regulations allow for "Temporary Uses", which can be in place for up to 10 years. The Fleet Boston Pavilion in South Boston is an example of such a temporary use.
- Third, publicly owned lands within a DPA may be available for redevelopment as a pocket park or waterfront vista point. For example, an observation park and platform was created on Pier 7 in South Boston on land owned by the City of Boston.

Further investigation of public access options in the watershed's DPAs is worthwhile. This effort could support development of municipal "DPA Master Plans" and specific actions to improve public access in the lower watershed, including combining public access with commercial or "temporary use" projects, and/or requesting a DPA boundary review.

There may also be significant Homeland Security issues, as well as the DPA regulations, that have to be considered in allowing public access to the waterfront and waterways in the lower watershed. More research is needed to translate security needs into waterfront planning guidelines.

In general, more work is needed to develop a vision for the port areas of the lower watershed. This vision must balance the needs of local residents for access to the waterfront, the need to control water and air pollution from port facilities, and the need to maintain a vibrant port economy.<sup>14</sup> A survey of revitalized ports in other urban areas should be undertaken to identify best practices and support a multi-stakeholder discussion of strategies for improving the resources of the lower Mystic watershed port areas.

### ***Regional Planning Efforts and Smart Growth Initiatives***

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<sup>13</sup> Office space, housing and hotels do not qualify as Supporting Uses.

<sup>14</sup> A recent CZM study catalogs the economic and employment benefits of marine and coastal businesses, which include commercial seafood, marine transportation, coastal tourism and recreation, marine science and technology, and marine-related construction and infrastructure. See MA CZM, 2006.

There are several programs now underway that will influence the distribution of state resources and will lay out a vision for development in the future. It is important that the needs of the Mystic River watershed communities and resources be considered in these efforts.

The Metropolitan Area Planning Council is conducting the **MetroFuture Project**. This effort builds on the MAPC's earlier MetroPlan for the 101 communities in its region (which includes all of the Mystic River watershed cities and towns.) This multi-year initiative will develop a sustainable growth plan for the region, and includes a large participatory process seeking public "visions" for Metro Boston. The project began with a major public meeting in October 2003, has had visioning meetings throughout the region, and will have a second major public meeting in January 2005.

The state's Department of Conservation and Recreation's **Urban Parks Division** has recently been reorganized, to provide a single point of contact at the agency for parks and reservations in each region. In addition, the agency is conducting an assessment of all of its parks and reservations, and establishing priorities for upgrading and maintenance. Many of the Mystic River watershed's parks owned by the DCR are in need of improvements, and preparation of a Master Plan for the Mystic River Reservation has been delayed for a number of years. It will be important for watershed advocates to participate in the DCR's planning and priority-setting process, to ensure that the watershed's parks receive the attention and resources they need.

Finally, the state's Office of Commonwealth Development is promoting a **Smart Growth** agenda that has a variety of components. In general, the goal is to encourage redevelopment over development in new locations; concentrated development, especially around transit centers; and use of existing infrastructure. Strong incentives are being provided to encourage "Smart Growth" projects. These include directing many of the state's capital investments toward projects that comply with Smart Growth principles, and evaluating municipal requests for state funding using specific criteria that reflect the municipality's performance on various Smart Growth measures, under the Commonwealth Capital program. Simplified or expedited environmental review of projects that meet Smart Growth criteria is also being discussed as part of the MEPA review process.

These Smart Growth initiatives have the potential to achieve important environmental benefits throughout the state. It is extremely important, however, that the initiatives do not have the unintended effect of reducing water quality and open space in urbanized areas. For example, it is important that "Smart Growth" projects in densely-developed areas meet stringent standards for providing local open space resources, improving stormwater quality, and reducing flooding problems. Moreover, it is important that low-income urban municipalities not be placed at a disadvantage in their efforts to protect local watershed resources by the provisions of the Commonwealth Capital program. An effective forum should be found for discussing the implications of the state's Smart Growth initiatives for urban communities like those in the Mystic River watershed.

## 5.4 Priorities for Action

The following major goals are suggested by the assessment of land use and open space issues presented above:

- Enhance Smart Growth and land use planning in the watershed, to improve practices that affect water quality, flooding and habitat.
- Increase the amount, connectivity and quality of open space throughout the watershed.

Chapter 8 presents specific tasks associated with these two overall goals.